Title: What factors shape the effectiveness of a leader-focused mental health training?

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Abstract

In light of the high prevalence of mental health (MH) problems and the important role that has been ascribed to MH-focused leadership training in addressing MH concerns in organizations, this study examines the conditions necessary for such training to be effective. Drawing on resource allocation theory, we explore the factors that influence training-induced changes in leaders' MH-related knowledge and self-efficacy following participation in the 3-hour long Mental Health Awareness Training (MHAT; Dimoff et al., 2016). Using multisource, multi-wave data from 83 leaders and their followers (n = 383) from 13 organizations, we confirmed that leaders were more knowledgeable of and felt more confident to promote mental health in the workplace following MHAT. Furthermore, leaders' learning goal orientation (LGO) predicted this increase in MH-related self-efficacy, but not in MH-related knowledge. The relationship between LGO and self-efficacy changes was not moderated by leaders' pre-training MH-supportive behaviors but was positively moderated by organizational climate of MH openness. Neither moderator had an effect on the relationship between leader LGO and changes in MH-related knowledge. We discuss the theoretical and practical implications of our findings in relation to reaping the benefits of MH-focused leadership training.

Keywords (5): mental health awareness training, self-efficacy, learning goal orientation, organizational climate, mental health support

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Nearly one billion people suffer from a mental illness or mental health (MH) disorder (e.g., depression; anxiety; burnout; strain; substance use disorders; World Health Organization [WHO] 2022b), resulting in a global MH crisis marked by significant individual, organizational, and societal losses. Each year, an estimated 12 billion workdays are globally lost to depression and anxiety, amounting to USD 1 trillion per year in lost productivity (WHO, 2024). With many healthcare systems unequipped to deal with the growing prevalence of MH-related issues (e.g., British Medical Association, 2024), employer-provided health benefits and resources (e.g., Employee Assistance Programs; extended healthcare for psychological counseling; disability leave inclusive of mental health) have become critical sources of support for struggling employees (Dimoff & Kelloway, 2017a, 2017b). In many organizations, leaders, managers, and supervisors (i.e., anyone who formally manages or oversees employees or direct reports) play a crucial role in employee well-being and health (Inceoglu et al., 2018; Koch & Binnewies, 2015) due to their frequent interactions with, and influence over, employees (Arnold, 2017; Hildenbrand et al., 2018; Kelloway et al., 2005). The WHO has recently highlighted that MH-focused leadership training, which aims to increase leaders' abilities to recognize when their staff are struggling and signpost resources, may be one of the most effective evidence-based strategies to improve and protect employee MH (Hammer et al., 2024; Kelloway et al., 2023; World Health Organization, 2022a).

The Mental Health Awareness Training (MHAT) program for leaders (Dimoff et al., 2016) is one of the few MH-focused leadership training programs to demonstrate consistent improvements in leaders' MH-related knowledge, self-efficacy, and intention to promote and protect employee MH, as well as employees' willingness to use MH resources (Dimoff & Kelloway, 2019b; Dimoff et al., 2016; Vogel, 2019). The MHAT is conceptually grounded in

resource theory frameworks (e.g., Resource Utilization Model, Dimoff & Kelloway, 2016; Conservation of Resources theory, Hobfoll, 2001) and based on the tested assumptions that if leaders are taught to better recognize and respond to behavioral signs associated with common MH problems, they can act as resource-facilitators – helping to bring awareness to resources and encouraging employees to seek support (Dimoff & Kelloway, 2019b, see supplementary material and methods for further information on the MHAT).

Yet, we have little knowledge regarding the moderating factors that shape MHAT effectiveness. For instance, all MHAT studies – and most MH leadership training studies – have used randomized control trials (RCTs) or wait-list control trial designs to capture direct improvements in measured outcomes (Anger et al., 2015; Dimoff et al., 2019; Mohr et al., 2025). This research has largely focused on the demonstration of intervention efficacy and has not explored the boundary conditions that might influence whether or not these improvements will materialize in organizational practice (Hammer et al., 2024; Kelloway et al., 2023).

Leadership (and leadership training) must be considered within the context in which it takes place (Baldwin & Ford, 1988; Beehr, 2019; Blume et al., 2010; Inceoglu et al., 2021; Oc, 2018), requiring examination of both leader characteristics and the characteristics of the work environment. Although previous MHAT research demonstrates that MHAT intervention groups experience more significant improvements in outcomes than control groups (Dimoff & Kelloway, 2016, 2019b), there is often variance in the level of improvement among leaders within the intervention groups – suggesting unexplored moderators of the training effects.

Consequently, to increase the potential for training effectiveness, we must extend beyond the question of 'Is this training effective?' to answering the question of 'For whom, and under what circumstances, is this training effective?' (Blume et al., 2010; Lacerenza et

al., 2017; Nielsen & Miraglia, 2017; Nielsen & Noblet, 2018). In this research, we focus on leaders' MH-related knowledge and MH-related self-efficacy (i.e., confidence to detect and act upon followers' MH problems; Dimoff et al., 2016) as indicators of training effectiveness. Both knowledge gains and increased self-efficacy are strong predictors of training transfer (Blume et al., 2010; Chiaburu & Marinova, 2005) and can be measured immediately following training (Lacerenza et al., 2017; Wallace et al., 2021).

To develop our theoretical model on the predictors of MHAT effectiveness, we draw on social cognitive theory (Bandura, 1986, 2001) and resource allocation theory (Kanfer & Ackerman, 1989). Both theories offer complementary explanations for the variability in post-training MH-related outcomes. Social cognitive theory (Bandura, 1986, 2001) and resource allocation theory (Kanfer & Ackerman, 1989) both center on resource allocation (Kanfer et al., 2017), which is a perspective particularly relevant in the context of leader training. Leaders – like all individuals – have limited cognitive and emotional resources which must be distributed across competing job demands (Demerouti et al., 2001). These resource allocation decisions are directed by the individual's goals.

Goals are internal representations of desired states that direct attention and organize action (Kanfer et al., 2017), with goal choice being shaped by objectives held by individuals themselves (i.e., self-set goals) and their organization (i.e., organizationally-determined goals) (Kanfer et al., 2017). The individual-level driver of interest in our study is leaders' learning goal orientation (LGO), which refers to individuals' drive to learn new skills, master novel situations and learn from experiences; VandeWalle et al., 2001). In particular, we suggest that LGO will influence increases in knowledge and self-efficacy associated with participation in the MHAT, as a result of increased cognitive resource allocation to this personally salient learning goal, in line with resource allocation theory (Kanfer & Ackerman, 1989).

Resource allocation theory (Kanfer & Ackerman, 1989) proposes that both proximal and distal motivational processes shape goal choice, goal striving and consequently goal attainment in a task, such as MHAT (Kanfer, 1990a; Kanfer & Ackerman, 1989). Proximal motivational processes determine the actual allocation of cognitive resources during task completion (in this context, the extent to which leaders pay attention to MHAT content). LGO is widely recognized to influence goal striving processes, specifically self-efficacy and learning strategies (Kozlowski et al., 2001; Payne et al., 2007), and the cognitive resources individuals allocate during a task (Kanfer & Ackerman, 1998). We focus on LGO as a proximal variable that should directly influence changes in leaders' MH-related knowledge and self-efficacy.

More distal motivational processes also affect these resource allocation decisions by shaping utility assessments – for example, by indicating how important a task is to achieving individual or organizational goals. We examine two such distal influences. First, we consider leaders' prior MH-supportive behaviors as an individual-level factor that influences the decision to allocate resources to participation in the MHAT – i.e., is supporting employee mental health aligned with my strengths and skills? Second, we propose that the leaders' perception of organizational climate of MH openness is a workplace factor that would influence the decision to allocate resources to MHAT participation – i.e., are the skills being taught valued by my organization. Both factors should shape leaders' training goals, and the resources allocated to the task, i.e. MHAT (Kanfer & Ackerman, 1989), and therefore interact with LGO as a proximal process to predict changes in MH-related knowledge and self-efficacy.

By delivering the MHAT as a compulsory training in 13 organizations, we test theory-derived hypotheses with multi-source, multi-wave data, making three contributions to the occupational health, leadership, and training literatures (see Figure 1 for our model). First,

although the training literature has long maintained that trainee characteristics affect training effectiveness in skills training (Baldwin & Ford, 1988; Blume et al., 2010), trainees are often considered passive learners and their role neglected in mental health training research (Nielsen & Shepherd, 2022). In contrast, we regard leaders as active training participants and examine their LGO as an antecedent of training-induced improvements in MH-related knowledge and self-efficacy following MHAT. In suggesting that leaders' LGO predicts measures of training effectiveness, we contribute to the MH leadership literature by highlighting LGO as an important individual-level trait that can help to explain participant differences in training outcomes and explain why training will lead to more meaningful changes among some leaders but not others.

Second, by exploring the influence of MH climate, we evaluate the significant role of relevant contextual influences on leader training outcomes which has been recognized as critical in both leadership (Day et al., 2021; Day, Bastardoz et al., 2021; Inceoglu et al., 2021) and training literatures (Baldwin & Ford, 1988; Blume et al., 2010). Organizational climate is critical in shaping the behavior of organizational members by representing behavioral opportunities and constraints (Johns, 2006, 2018; Oc, 2018). Like any organiztional member, leaders are influenced by the norms and standards that the organizational context transmits, which, in the case of MH, might be reflective of the prevailing, societal MH stigma (e.g., Ahad et al., 2023).

Finally, there has been a general increase in MH-related literacy in the general population (Sequeira et al., 2022) that could result in ceiling effects in MH-focused leadership training. (Dimoff & Kelloway, 2019b; Lacerenza et al., 2017; Vogel, 2019). Despite the rise in MH literacy, MH stigma, i.e. negative attitudes toward and beliefs about MH and people with MH problems (Corrigan, 2004), persists (Thornicroft et al., 2022) and leaders might well share these attitudes. When organizations attempt to inculcate values

through training, participants' prior beliefs may lead them to reject the training content or create a backlash against focal groups (Beier & Kanfer, 2009). Both observations point to the need to consider leaders' prior experience with the training content, i.e., mental health. Therefore, we investigate leaders' MH-supportive behaviors *prior to MHAT* as an indicator of leaders' existing MH-supportive skills and experience relating to employee MH.

In sum, we propose that the effect of leaders' LGO on changes in MH-related knowledge and self-efficacy depends on leaders having high levels of prior MH-supportive behaviors, as captured via followers' ratings, and the perception of organizations as having a high climate of MH openness, which involves employees being able to have and discuss MH problems without fear of negative repercussions. In applying the findings of the present study to practice, organizations will be able to draw on the robust evidence that this project adds to in selecting effective training to target the MH-related challenges faced by individuals, organizations and societies alike, as well as make more informed decisions in investing funds and other resources towards MH-related manager training. Organizations and training providers will also be more informed about the individual and contextual factors that may influence the effectiveness of such investments, and perhaps equally importantly, which training outcomes are robust to trainee characteristics and contextual influences and can be reliably achieved across contexts and for the majority of trainees. As a result, they will be able to create the right conditions and individualized trainee support to maximize the reach and impact of MHAT and similar training programs within their organizations (Gubbins & Rousseau, 2015).

Insert Figure 1 about here

Improving leader MH-related knowledge and self-efficacy through training

The MHAT was designed to directly improve leaders' mental health literacy (i.e., knowledge) and enhance leaders' self-efficacy with regard to promoting MH (see Dimoff et al., 2016). Both knowledge and self-efficacy are short-term indicators of training effectiveness, with changes established quickly after MHAT participation (e.g., Dimoff & Kelloway, 2016). The MHAT provides leaders with fact-based information (e.g., prevalence rates; common symptoms; effective forms of therapeutic and medical support) about some of the most prevalent MH problems and MH disorders within the working population – strain, burnout, anxiety, depression and substance use disorders (Dimoff et al., 2016; World Health Organization, 2022b). In addition to this fact-based information, leaders are educated on the stigma surrounding MH disorders and to recognize how stigmatizing attitudes may negatively influence their interactions with their employees. Finally, leaders are also provided with the workplace-validated Signs of Struggle (SOS) Checklist (Dimoff & Kelloway, 2019a), designed to help them recognize when their employees may be showing behavioral warning signs of deteriorating MH (e.g., social withdrawal; performance decline; attendance issues; emotional distress; suicidal ideation), as well as information regarding various organizational, local and national MH resources. Therefore, we hypothesize that leaders' MH-related knowledge (i.e., general understanding of the contributing factors to MH problems, the signs or symptoms of deteriorating MH, and the negative influence of stigma) will increase as a result of participation in the MHAT.

As knowledge alone may not be sufficient to foster behavior change (Bandura, 1986, 2001) the training was specifically designed to create self-efficacy-building experiences for trainees, which map onto social cognitive theory (Bandura, 1986, 2001). Self-efficacy represents individuals' perception of their ability to engage in specific behaviors and use learned skills for the successful achievement of desired goals (Bouffard-Bouchard, 1990). It has an influence on individuals' cognition, motivation, affect, selection of contexts and areas

where effort is invested (Bandura, 1993), and ultimately behavior itself (Bandura, 1982). Prior research has shown that leadership training participation can result in increases in leaders' general and specific self-efficacy (e.g., leader self-efficacy and self-efficacy to promote safety; Chiaburu & Marinova, 2005; Kwok et al., 2021; Lacerenza et al., 2017; Mullen & Kelloway, 2009). We explore here whether MHAT participation leads to an increase in a specific form of self-efficacy, MH-related self-efficacy, which we define, in line with Dimoff and colleagues (2016), as individuals' confidence to detect and act upon followers' MH problems.

Bandura's (1986) social cognitive theory puts forward four types of experiences as the main sources of self-efficacy beliefs and we argue that MHAT participation exposes leaders to these experiences, contributing to their MH-related self-efficacy. First, vicarious experience (i.e., social comparison, modelling, and observing similar others) was facilitated through interactive case studies and videos. Second, verbal persuasion (i.e., receiving direct feedback on one's performance, skills, or behavior) was incorporated via immediate post-case study feedback provided by trainers, and structured "Q&A" periods throughout the training session. Third, physiological and affective experiences (i.e., internal physical and emotional states individuals associate with a particular behavior or task) were taken into consideration by creating a psychologically safe learning environment, where participants were able to ask questions and practice new skills in a consequence-free environment, engendering confidence and reducing self-doubt. Fourth, enactive mastery (i.e., effectively dealing with challenges and persisting toward goal achievement) was embedded through a case study "assessment" during which participants engaged in a second case study designed to mimic the first case – this time solving problems more quickly and effectively than in the first case (for more detail, see Dimoff, 2016).

Our proposition that MHAT participation leads to an increase in MH-related knowledge and MH-related self-efficacy is supported by prior research using a wait-list control design, which has shown that MHAT resulted in post-training changes in both variables (Dimoff et al., 2016). We therefore hypothesize:

Hypothesis 1a: Participation in MHAT will be positively related to an increase in leader's MH-related knowledge.

Hypothesis 1b: Participation in MHAT will be positively related to an increase in leader's MH-related self-efficacy.

Learning goal orientation as a pre-requisite for improvements in MH-related knowledge and self-efficacy

It is widely acknowledged that not all participants will develop uniformly during formal leadership training (Kwok et al., 2021; Snow, 1991). An important trainee characteristic in this regard is LGO, which originated from the educational literature (Dweck, 1986) and captures individuals' drive to learn new skills, master novel situations and learn from experiences (VandeWalle et al., 2001). Individuals with a high learning orientation approach tasks in order to learn for learning's sake, adopting an incremental theory of intelligence according to which exerting effort can improve knowledge and performance, which are considered malleable (Bandura & Dweck, 1985; Elliott & Dweck, 1988). In the organizational and training literature, LGO is seen as a mental framework that shapes how individuals respond in achievement situations (Farr et al., 1993; Payne et al., 2007). It has been widely recognized as a pre-requisite of task-specific self-efficacy, learning strategies, and learning (Kozlowski et al., 2001; Payne et al., 2007), and is also a well-established antecedent of leader development (Wallace et al., 2021). Kowk and colleagues (2021), for example, demonstrated an association between LGO and an increase in leader efficacy (including self-efficacy) following leadership training. We extend this literature to the MH-

specific domain of leader competencies to propose, drawing on resource allocation theory (Kanfer & Ackerman, 1989), that leaders with a high LGO will benefit more from MHAT in relation to increases in MH-related knowledge and self-efficacy following training.

Although LGO is often viewed as a stable, trait-like individual difference (Colquitt & Simmering, 1998) we draw on resource allocation theory to suggest that it may be shaped by the context of training. Specifically, resource allocation theory (Kanfer & Ackerman, 1989) delineates two cognitive, motivational resource allocation processes, distal and proximal, that determine individuals' allocation of cognitive resources, including effort and attention, to the achievement of a goal (e.g., task or training completion). Through these processes individuals' goal choice, action and, ultimately, learning and performance in relation to the task are shaped (Kanfer, 1990a). Proximal motivational processes, conversely, take place during task completion and determine the distribution of these cognitive resources to on-task, off-task or self-regulatory activities (e.g., self-monitoring). In the following, we argue that leaders' LGO influences proximal motivational processes, specifically the allocation of cognitive resources to MHAT training, which are made available by situational, contextual variables through distal motivational processes (see hypotheses 3 and 4).

Goal orientation has been found to affect how individuals approach learning tasks in complex skill acquisition situations and direct their cognitive resources within learning tasks (Kanfer & Ackerman, 1989), affecting training outcomes (Kozlowski et al., 2001). As such, goal orientation determines the amount of cognitive resources individuals allocate during task completion to on-, off- or self-regulatory tasks, shaping outcomes. Individuals high in learning orientation are, by their very nature, eager to learn new skills (VandeWalle et al., 2001), use learning strategies that commit new knowledge structures to memory, process information deeply and persist longer in their learning efforts (Meece et al., 2006; Sitzmann & Ely, 2011). As such, we argue that individuals high in LGO dedicate allocated cognitive

resources during MHAT, a complex skill acquisition situation, to on-task as opposed to off-task activities (e.g., scrolling on mobile phone or chatting with peer), resulting in increased MH-related knowledge and self-efficacy. Our theoretical reasoning is supported by research that shows that individuals with a mastery goal orientation ("equivalent" to learning goal orientation; p. 981, Chadwick & Raver, 2015) are primed to explore complex relations in tasks, make errors and learn from those errors, which promotes a coherent knowledge structure and task-specific self-efficacy (Kozlowski et al., 2001). We therefore hypothesize:

Hypothesis 2a: Leader's learning goal orientation will be positively related to an increase in their MH-related knowledge.

Hypothesis 2b: Leader's learning goal orientation will be positively related to an increase in their MH-related self-efficacy.

The role of organizational climate of MH openness

Distal motivational processes, which take place prior to the task, affect goal attainment through influencing individuals' goal setting in relation to the task and the cognitive resources of attention and effort individuals, as a consequence, intend to make available (Kanfer, 1990b). As such, they place a volitional limit on the availability of these resources during the task or training. Distal processes interact with the proximal motivational processes, jointly shaping engagement in the task, learning and training outcomes (Kanfer & Ackerman, 1989). These utility assessments determine the pool of cognitive resources individuals intend to make available for completion of a task, such as participation in a MH-focused leadership training and MHAT. We suggest that the organizational context of training is one such distal process.

The importance of the organizational context for shaping the behavior of organizational members is well established (Johns, 2006), with leaders' behaviors not taking place in a vacuum (Fiedler, 1978; Oc, 2018). We posit that the extent to which the

organization is perceived as supportive of MH is a key distal factor that influences the extent to which leaders engage in MH training and whether training participation can be effective.

Drawing on the psychological safety climate literature (Edmondson, 1999), we define climate of MH openness as the extent to which organizational members perceive that having and discussing MH problems is accepted and has no negative repercussions within their organization. We thereby selectively leverage the safety climate literature as discussing MH and MH-related issues openly in organizations involves a degree of interpersonal risk (Edmondson, 1999; Grandey et al., 2012b). This is because MH stigma, a negative and erroneous attitude about a person suffering from a MH problem that results in negative action and discrimination (Corrigan, 2004), is still wide-spread (Thornicroft et al., 2022), despite overall rises in MH literacy.

Consistent with resource allocation theory (Kanfer & Ackerman, 1989), the organizational context can be considered as influencing distal motivational processes, which take place prior to the task and determines the cognitive resources made available to the task based on utility assessments. We suggest that the organizational context should influence the effort and attention leaders have available during MHAT. In effect, the organization's climate of MH openness enhances the positive effect of leaders' learning goal orientation on MH-related self-efficacy changes. Specifically, leaders in organizations that have a high climate of MH openness will observe staff openly discussing MH in the workplace, and be aware of the non-discriminatory nature of HR policies and organizational MH resources, such as employee assistance programs. Leaders should interpret these visible artifacts as signals of the organization's commitment to MH support (Spence, 1978), and conclude that employees with MH problems are valued organizational members and being supportive of employee MH is organizationally desired and potentially rewarded (Meyer et al., 2010).

Such considerations should result in leaders assessing the skills and knowledge they expect to acquire in the MHAT as useful and necessary for the completion of their daily work and therefore transferable to their workplace (i.e., performance-utility assessment; Kanfer & Ackerman, 1989), and the three-hour training as a relatively 'low cost' way of obtaining these skills (i.e., performance-resource relation; Kanfer & Ackerman, 1989). Both assessments should result in a positive effort-utility relation and overall positive utility assessment of the MHAT, such that leaders will prioritize MHAT and allocate resources to the training. Resulting activities, such as mentally preparing for MHAT participation, blocking time in the calendar to participate undisturbedly or preparing questions regarding past difficulties in dealing with followers' MH, should enhance the proposed positive effect of leaders' LGO on MH-related knowledge and self-efficacy increases following training.

Conversely, leaders whose organizations are not supportive of MH should be less motivated to allocate resources to the training as they wouldn't be able to transfer it into practice (i.e., negative performance-utility assessment; Kanfer & Ackerman, 1989). In some cases, investing effort into MHAT might even constitute an inappropriate course of action with potentially negative repercussions given that MH support conflicts with the organizational norms (Meyer et al., 2010; Spence, 1978). As such, leaders in organizations with a low climate of MH openness are likely to consider MHAT as less useful and will, based on these utility assessments (Kanfer & Ackerman, 1989), make less effort and attention available.

Consistent with these suggestions, previous research has found that climate shapes the relationships between individual characteristics and training outcomes through providing situational cues regarding the value and utility of the training content (Blume et al., 2010; Colquitt et al., 2000). We therefore hypothesize:

Hypothesis 3a: The positive relationship between leader's learning goal orientation and an increase in their MH-related knowledge is moderated by organizational climate of MH openness, such that the relationship is stronger when organizational climate of MH openness is high compared to low.

Hypothesis 3b: The positive relationship between leader's learning goal orientation and an increase in their MH-related self-efficacy is moderated by organizational climate of MH openness, such that the relationship is stronger when organizational climate of MH openness is high compared to low.

The role of leaders' prior MH-supportive behaviors

We argue that leaders' prior exposure to and experiences with MH-related conditions and interactions, including their own responses and behaviors, is a second important contextual variable that shapes their perceived utility of MHAT and subsequent resource allocation to the training. Leaders with high levels of pre-training MH-supportive behaviors should allocate more cognitive resources to the training, strengthening the relationship between leaders' LGO and their MH-related self-efficacy, whereas leaders with low levels should make less resources available, weakening this relationship. In the work context, some leaders may have already engaged in MH-supportive behaviors towards their followers prior to MHAT participation. Such behaviors involve general support of employee wellbeing, discussion of available resources, and de-stigmatization of MH problems and illnesses (Dimoff, 2016).

Given the high incidence rate of MH problems (World Health Organization, 2022b), combined with increases in the public's and organizations' general awareness of MH and mental illness (Kelloway, 2017), it is likely that not all leaders are 'blank canvases' when it comes to MH by the time they attend MHAT. As such, MHAT trainees likely vary in terms

of their prior expression of MH-supportive behaviors, which should have implications for how they approach and engage with the MHAT and the resources they allocate to it.

Leaders who already exhibit high levels of MH-supportive behaviors should make a positive utility assessment when it comes to MHAT participation and allocate effort and attention to it, as MHAT is aligned with their existent behaviors and strengths. Prior agentic engagement in MH-supportive behaviors by leaders is likely indicative of their regard for MH as important and of their general duty of care in their managerial role as extending to MH-related support (e.g., Martin et al., 2018). MHAT therefore represents a relatively resource and cost-effective opportunity for these leaders to expand existing knowledge and skills, which should result in leaders forming, for example, pre-training intentions regarding training outcomes, bringing specific problems they face in practice to the training for discussion and consultation, or setting an out-of-office notification to be able to focus on the training. As such, this allocation of resources to MHAT should strengthen the positive effect of leaders' LGO on MH-related knowledge and MH-related self-efficacy.

Conversely, leaders, who exhibit low levels of MH-supportive behaviors in the workplace should make less of a positive utility assessment concerning MHAT prior to participation as low levels could signify that leaders regard MH as less important, or are reluctant to engage in MH-supportive behaviors due to negative stereotypes and prejudice that are commonplace in employment settings (e.g., Follmer & Jones, 2018; Janssens et al., 2021), do not see MH support as a valid component of their roles and responsibilities, or simply lack the skills and experience of supporting employees' MH. Such leaders may allocate fewer resources to MHAT as they should judge the effort required to obtain high levels of MH skills through the MH training as resource-costly or warranting considerable resource investment and as they might or might not assess MH skills as valuable.

Consequently, as fewer resources are allocated to MHAT, the positive relationships between LGO and MH-related knowledge and self-efficacy should be weakened.

Our reasoning regarding the moderating role of prior MH-supportive behaviors is also consistent with the empirically supported developmental readiness perspective (Hannah & Lester, 2009). According to this perspective, individuals with ability, orientation and openness to learn will be more open to leadership development. Specifically, it is argued that individuals with already existing knowledge, skills and domain-specific developmental confidence have a higher developmental readiness, making them more open to change (Avolio & Hannah, 2009), resulting in greater improvements in outcomes from leadership training. LGO has been discussed as a key component of developmental readiness (e.g., Kwok et al., 2021) and its interaction with characteristics of developmental experiences and motivation to lead on leader training outcomes has been explored (Dragoni et al., 2009; Kwok et al., 2021). We contend that the developmental readiness perspective also supports that prior MH-supportive behaviors interact with LGO to enhance its effect on MH-related knowledge and self-efficacy. Leaders with existing MH knowledge, skills and developmental confidence (i.e., high prior MH-supportive behaviors) should be more open to change (Avolio & Hannah, 2009), enabling them to better reflect on lessons taught and take advantage of relevant developmental opportunities, such as MHAT.

Given our theoretical reasoning, the broad support for the developmental readiness perspective (Kwok et al., 2021) and empirical research highlighting that prior behavioral experience augments the effects of training (Alao & Guthrie, 1999; Day, Riggio, et al., 2021), we hypothesize:

Hypothesis 4a: The positive relationship between leader's learning goal orientation and an increase in their MH-related knowledge following MHAT participation is moderated by

leader's MH-supportive behaviors prior to the training, such that the relationship is stronger when they exhibit high levels of these behaviors compared to low levels.

Hypothesis 4b: The positive relationship between leader's learning goal orientation and an increase in their MH-related self-efficacy following MHAT participation is moderated by leader's MH-supportive behaviors prior to the training, such that the relationship is stronger when they exhibit high levels of these behaviors compared to low levels.

Method

Study setting

The training was delivered and data were collected in collaboration with a partner, a charitable organization based in the South Yorkshire region of the UK, who are funded mostly by government grants to deliver social and public benefits to organizations in the wider region. Prior to training delivery, the MHAT, originally developed and delivered in Canada (Dimoff & Kelloway, 2019b; Dimoff et al., 2016), was adapted to the UK context and professional trainers employed by the charitable organization were trained in its delivery. These six trainers delivered the training in the organizations, sometimes on their own or, to larger groups, in pairs, made up of one experienced and one new MHAT trainer. Depending on the number of participants, each organization received one or two MHAT sessions. Questionnaire data was collected from employees, whose leaders were to participate in the training, two weeks ahead of the MHAT, and from leaders immediately before and after training participation. Training and data collection took place in the second half of 2019 and early 2020. We had initially planned to also collect 3-month follow-up data from leaders and followers; however, this was halted due to the onset of Covid-19 (March 2020).

MHAT

The MHAT program used in this study closely followed the version developed and evaluated in earlier studies (Dimoff & Kelloway, 2019b; Dimoff et al., 2016), which adhered

to guidelines from the National Institute for Occupational Safety and Health (1996) surrounding best practices in protecting and supporting employee well-being. The MHAT program was informed by extensive literature reviews of workplace MH, MH first aid, and other workplace interventions (see Dimoff, 2016; Dimoff & Kelloway, 2019b; Dimoff et al., 2016), with an updated review conducted more recently to ensure continued alignment with current recommendations (e.g., Anger et al., 2024).

Consistent with recommendations from the WHO (2022) and the Mental Health Commission of Canada (2023), the MHAT focuses on (a) early identification, (b) timely engagement, and (c) ongoing assessment and support. The training was delivered in-person as a 3-hour training session, with a 15-minute break at the mid-point. Two lecture-based modules (i.e., focused on knowledge-building in Module 1 and skill development in Module 2) were infused with interactive activities (e.g., case study scenarios; small group work and discussion) and videos to improve mental health literacy and reduce stigma, emphasizing leaders' roles in supporting employee mental health and well-being (Bandura, 1986; Dimoff & Kelloway, 2016; Saks & Haccoun, 2010). Interactivity allowed participants to practice recognizing mental health issues (e.g., stress, burnout, anxiety, depression, substance use disorders), observe peer modeling, and receive feedback to reinforce confidence and skill (Bandura, 1986). Participants also received the Signs of Struggle (SOS) Checklist, a validated tool designed to support behavioral monitoring and identification of mental health warning signs (Dimoff & Kelloway, 2019a). Leaders were instructed on the tool's purpose, development, and appropriate use. Exercises guided leaders in applying the SOS to identify signs and refer employees to resources when warranted—especially when multiple or extreme indicators (e.g., suicidal ideation) were present. In alignment with practices in interactive workplace training and development (Noe, 2020), the MHAT is delivered to groups of approximately 15-25 leaders.

Adaptation process

For this study, the case study scenarios, videos, and resource-specific details were adapted to fit a UK audience, where workplace policies, programs, and national healthcare supports differ from those in Canada, where the MHAT has been previously evaluated. Customization – or adaptation - is an integral step to ensuring the 'face validity' of the training and facilitating training transfer (Axtell et al., 1997; Machin & Fogarty, 2003).

The adaptation process involved the third author training the first and second author in the delivery of the MHAT ('train the trainer'). Subsequently, the first author delivered the training to a cohort of 25 MBA students at a UK University, using the original training slides with some adaptation (e.g., UK MH data and UK MH resources had been added) and collected informal feedback on the delivery and training materials, namely the training slides, case studies and handbook. With participants' verbal consent, we also recorded the session in order to see how the training delivery could be improved to be streamlined with the American and Canadian delivery (e.g., how much time is spent on the case studies and on each of the training slides). Finally, the first author delivered the training to a small number of leaders of the partner organization (n = 10), six of whom were thereafter interviewed by the second author. The feedback from MBA and leader participants was used to produce the final, adapted MHAT training package for roll out in the UK, which included reworded sentences in the case studies and addition of UK resources to the slides and handbook.

Subsequently, six employees from the partner organization were trained by the first author in the delivery of the training. This involved the employees participating in the MHAT themselves as participants, followed by a detailed discussion of the training material. They were also briefed in detail about the data collection process and provided with a handout, Q&A document and video that answered questions and could be used to introduce the

training and data collection process to HR departments of the participating organizations. The aim of this process was to achieve a high degree of training delivery standardization.

Data collection procedure and sample

We obtained ethical approval prior to the training delivery and data collection. The partner organization contacted regional organizations to introduce the MHAT and data collection process and offer the MHAT free of charge. In organizations that signed up to take part in the MHAT and research ('participating organizations'), HR departments contacted all leaders/ all leaders of specific departments to participate in the training. In total, 427 leaders from 18 organizations completed the MHAT. Data for this study were collected from these leaders and their followers. Specifically, all followers whose leaders had signed up for the MHAT received either a paper-and-pencil questionnaire or a link to the online survey (depending on computer access at work) from their HR department two weeks before leaders' training participation (T1). Leaders who attended the training completed a paper-and-pencil questionnaire immediately before (pre-training, T2) and after participation in the MHAT (post-training, T3). Data collection ended with the onset of the Covid-19 pandemic.

In total, we received 631 follower responses (T1), and 301 leader pre-training (T2) and 301 leader post-training responses (T3). We matched pre- and post-training data for 298 leaders, out of which data for 126 leaders could be matched with 429 follower responses, representing 42% of all matched leader responses and 68% of all follower responses. Independent samples t-tests revealed no significant difference concerning demographics (e.g., age, gender, tenure) and leader-rated study variables (LGO and MH-related self-efficacy) between leaders whose followers had or hadn't responded. As our hypotheses were at the leader level and we used followers' shared perceptions of the moderators, we excluded data for leaders matched with only one follower, yielding a sample of 87 leaders and 389 followers. Specifically, we opted to exclude leaders matched with a single respondent

because it is not possible to ascertain whether the observations and perceptions reported by the follower are shared and reflect the collective experience and assessment of the leader-related and contextual variables of interest, which are reflective variables and warrant aggregation (Nijstad et al., 2025). Excluding singe-respondent data also allowed for a meaningful assessment of within-group agreement and the reliability of the group means (see 'data analysis' below) and justified aggregating the follower-rated variables, which reflects the conceptualization of our moderators.

Complete data on all study variables (including controls) was available for 85 leaders who supervised 383 follower respondents from 13 organizations. Our sample comprised 41 male and 43 female leaders (one leader did not indicate their gender), who were on average 43.4 years old (*SD* = 10.04), had an organizational tenure of 12.3 years (*SD* = 11.23), worked on average 41.9 hours per week (*SD* = 8.75) and had mostly some experience with MH (82.4%) through either themselves or a close friend or family member previously experiencing a mental illness. On average, 9 leaders per organization contributed to the sample (Min = 1, Max = 16, *SD* = 4.00). Leaders had supervised their staff on average 4.9 years (*SD* = 5.45) and, on average, 5 followers per leader responded (Min = 2, Max = 22, *SD* = 3.51). Of the followers, 57.3% were female, on average 39.5 years old (*SD* = 13.41), had worked in their organization for an average of 7.9 years (*SD* = 8.92) and worked on average 36.8 hours per week (*SD* = 7.66). The organizations belonged to a range of industries, including local authorities, social care providers, lighting and plumbing, and electronics.

Measures

Data were collected from employees at T1 (2 weeks before leaders' training) and from leaders at T2 (immediately before the training) and T3 (immediately after the training). All items are included in the supplementary materials and were, except for demographics and MH-related knowledge, rated on a 5-point Likert scale ranging from *Strongly Disagree* to

Strongly Agree. For adaptations, we followed the recommendations by Heggestad et al. (2019). As per our ethical approval, followers and leaders read participant information sheets and provided informed consent prior to survey completion.

Leader-rated measures

Learning goal orientation. Leaders provide ratings for their LGO at T2 by completing the four-item LGO subscale by VandeWalle (1997). A sample item is: "I prefer difficult and challenging tasks so that I'll learn a great deal." Cronbach's alpha was $\alpha = .74$.

MH-related self-efficacy. Leaders provided ratings for their MH-related self-efficacy at T2 and T3 by completing six items by Dimoff et al. (2016). The 6-item measure of MH-related self-efficacy is based on an adapted version of the 9-item general self-efficacy scale (Chen et al., 2001). Items were adapted to reflect self-efficacy specific to supporting employee mental health, rather than self-efficacy in general. For example, the item "I am confident that I can perform effectively on many different tasks" was modified to "I am confident that I can perform effectively to support the mental health of my employees." Three items from the original 9-item General Self-Efficacy Scale were not adapted, as their adaptation to employee mental health would have changed the inherent meaning of the items or been nonsensical. Cronbach's alphas were $\alpha = .81$ at T2 and $\alpha = .90$ at T3.

MH-related knowledge. Leaders provided ratings for their MH-related knowledge at T2 and T3 by completing three fact-based items (i.e., questions with clear right/wrong answers) developed for this study. The three items captured key knowledge regarding MH that is covered in the training. If the correct answer was chosen, participants received one point. A total score for MH knowledge was calculated as a sum, ranging from 0 to 3. A sample item is: "Which three steps are recommended for providing early assistance when an employee has mental health problems". As the variable was calculated as a summative score, we do not provide a reliability value.

Control variables. We controlled for the pre-training (T2) level of the outcome (MH-related knowledge and MH-related self-efficacy) in all analyses as we were interested in predicting changes in these outcome variables. We controlled for *organizational tenure* (in months) collected at T2 as it was significantly correlated with our study variables (Becker et al., 2016). We also found significant correlations of the seven different combinations of the six trainers who delivered the MHAT with some of the study variables. We therefore included 6 dummy variables in all analyses to control for these effects. We also explored a range of other theoretically-driven controls (Becker et al., 2016), namely leader age and gender. These were not correlated to our study variables and did not alter the findings and we therefore did not include them.

Follower-rated measures

Leaders' MH-supportive behaviors. Followers provided ratings of leaders' MH-supportive behaviors at T1 by responding to six items (Dimoff & Kelloway, 2019). A sample item is: "My line manager encourages employees to take care of their MH." As we treated this variable as a leader-level variable, we justified using aggregated scores via ICC(1) and ICC(2) scores. The ICC(1) = .26 was above the conventional cutoff value (ICC(1) > .12; James, 1982), indicating substantial variance at the leader level. However, the ICC(2) = .60 was below the recommended value of ICC(2) = .70 (Bliese, 2000; LeBreton & Senter 2008; Schneider et al., 2013), which is an indicator of the reliability of the group means. The lower ICC(2) for leaders' MH-supportive behaviors is likely a reflection of the relatively small group size of respondents for each leader (Schneider et al., 2013).

Organizational climate of MH openness. Followers provided ratings of organizational climate of MH openness by completing six items adapted from Edmondson's (1999) scale of psychological safety climate. The narrow adaptation of psychological safety climate to focus on MH aligns with the common practices and recommendations in the climate literature that

regard focused climate concept measures as more valid and useful, because they allow for narrow, feasible and actionable practical implications (e.g., Schneider et al., 2013). We chose to adapt the scale for psychological safety because its original broad format taps into the role and importance of safety in interpersonal risk taking, which is inherent in discussion and disclosure of MH, a topic that is traditionally mired in stigma (Corrigan et al., 2004). A similar approach, using Edmondson's (1999) scale, has been taken by Grandey et al. (2012a). We also shifted the referent from 'team' to 'organization' because we were interested in the leader-level variation of the wider shared perceptions and experiences of organizational members with regard to this focused climate construct. An example of our adaptation is: "Members of this team are able to bring up problems and tough issues", which was adapted to: "Staff in this organization are able to bring up problems and tough issues related to MH." As we treated this variable as a leader-level variable, we justified using aggregated scores via ICC(1) = .47 and ICC(2) = .80 scores, which were above the recommended values (Bliese, 2000; James, 1982; LeBreton & Senter 2008; Schneider et al., 2013).

Control variables. We considered group size (respondents per leader), follower age and gender as covariates. We did not include them in the analysis as their inclusion was not theoretically or empirically justified (Becker et al., 2016).

Data analysis

Data are available upon request. All analyses were conducted in IBM SPSS Version 29. To test H1a-b, we ran paired-samples T-tests, comparing pre-training and post-training scores. To test H2a-b, we used hierarchical linear regressions, regressing MH-related knowledge and MH-related self-efficacy (T3) on the predictor (LGO, T2), the controls (organizational tenure and trainer combinations, T2) and the pre-training level of the outcomes (T2). To test H3a-b and 4a-b, we ran moderated regressions using the Process macro model 2 (Hayes, 2018), which includes both moderators at the same time per outcome,

and provided us with simple slopes. We obtained 95% confidence intervals for these conditional effects using 50,000 iterations and plotted the interaction (Dawson, 2014). To obtain unbiased estimates, we grand mean centered all predictors (Enders & Tofighi, 2007). While other methods for the analysis of repeated measures are available and sometime preferable (e.g., modeling within-person change or ANOVA), these do not offer significant benefits for our analysis as we did not include any leader-level time-invariant covariates and our interaction effects would be harder to interpret (see e.g. regressed change, Cohen et al., 2003).

Results

The descriptives and intercorrelations are reported in Table 1. Before proceeding with the test of the hypotheses, we confirmed the distinctiveness of the study variables via multilevel confirmatory factor analyses (CFA) conducted in MPlus given that our data was nested (followers nested in leaders). The proposed 5-factor model that modeled the follower-rated variables at the within and the leader-rated variables at the between level had an acceptable fit [$\chi 2(126) = 468.96$, $p < .01$; comparative fit index (CFI) = .90 root mean square error of approximation (RMSEA) = .084, standardized root mean square residual (SRMR) = .112] and fit the data better than two alternative models: A 3-factor model combining the outcome variables rated by leaders (MH-related self-efficacy and MH-related knowledge at T3) and the variables rated by followers (leaders' MH-supportive behaviors and climate of MH openness at T1) [$\chi 2(282) = 2336.78$, $p < .01$; CFI = .46; RMSEA = .138; SRMR = .212] and a 2-factor model combining all variables rated by followers and those rated by leaders [$\chi 2(309) = 4119.59$, $p < .01$; CFI = .44; RMSEA = .141; SRMR = .212]. Both chi-square difference tests comparing the 5-factor model with the 3-factor model (χ^2 difference (156) = 1867.82, $p < .001$) and the 2-factor model (χ^2 difference (183) = 3560.53, $p < .001$) were significant.

Insert Table 1 about here

Hypotheses testing

The findings are reported in Tables 2-3. As predicted in H1a, participation in the MHAT contributed to an increase in leaders' MH-related knowledge ($t\ (84) = -10.16$, $p < .001$), when comparing pre-training ($M = 1.84$, $SD = 0.85$) and post-training scores ($M = 2.80$, $SD = 0.43$). Equally, comparison of pre-training ($M = 3.56$, $SD = 0.55$) and post-training scores ($M = 3.99$, $SD = 0.55$) showed that participation in the MHAT contributed to an increase in leaders' MH-related self-efficacy ($t\ (84) = -8.38$, $p < .001$), leading us to accept both H1a and H1b.

The test of H2a showed that leaders' LGO did not predict the observed positive change in MH-related knowledge ($\beta = .02$, $p = .789$), leading us to reject this hypothesis. Leaders' LGO did predict the positive change in MH-related self-efficacy following training ($\beta = .21$, $p < .05$), leading us to accept H2b.

Insert Table 2 about here

The test of H3a and H4a showed that the relationship between leaders' LGO and a post-training increase in MH-related knowledge was not moderated by either leaders' pre-training MH-supportive behaviors ($\beta = -.10$, $p = .611$) nor the organizational climate of MH openness ($\beta = .07$, $p = .755$), leading us to reject both H3a and H4a. Regarding MH-related self-efficacy as an outcome, the relationship between leaders' LGO on a post-training increase in MH-related self-efficacy was conditional on organizational climate of MH openness ($\beta = .60$ $p < .01$), supporting H4b, but not conditional on leaders' pre-training MH-

supportive behaviors (β = .15, p = .425), rejecting H3b. Regarding organizational climate of MH openness (Figure 2), the simple slope tests showed that leaders' LGO led to an increase in post-training MH-related self-efficacy if the organization had high levels of climate of MH openness (+1SD; β = .49, p < .001). However, if organizations had low levels of this climate (-1SD; β = -.20, p = .285), leaders' LGO was not related to their MH-related self-efficacy.

Post-hoc analysis

We recognize that testing multiple interactions simultaneously may lead to collinearity and ambiguous results. For these reasons, we ran a post-hoc analysis and tested H3a-b and H4a-b using moderated linear regressions with only one moderator at a time. The findings showed that neither leaders' pre-training MH-supportive behaviors (β = -.06, p = .660), nor organizational climate of MH openness moderated the link between leaders' LGO and changes in MH-related knowledge (β = -.01, p = .977), rejecting both H3a and H4a. Regarding MH-related self-efficacy as an outcome, in the absence of organizational climate of MH openness, leaders' pre-training MH-supportive behavior moderated the relationship between leaders' LGO and their change in MH-related self-efficacy (β = .43, p < .01), providing support for H3b. The simple slope tests showed that leaders' LGO led to an increase in post-training MH-related self-efficacy if leaders had high levels of prior MH-supportive behavior (+1SD; β = .49, p < .001), but not if they had low levels of prior MH-supportive behavior (-1SD; β = -.03, p = .832). The findings for H4b were unchanged insofar that the effect of leaders' LGO on changes in MH-related self-efficacy was dependent on organizational climate of MH openness (β = .65, p < .001), with the simple slopes indicating that this relationship was only significant for high (+1SD; β = .49, p < .001) and not low levels of organizational climate of MH openness (-1SD; β = -.25, p = .107).

Insert Table 3 about here

Insert Figure 2 about here

Discussion

This study aimed to shed light on the factors that predict changes in leaders' MH-related knowledge and MH-related self-efficacy following participation in a short 3-hour MH-focused leadership training, the MHAT (Dimoff et al., 2016), designed to improve leaders' ability to deal with employees' MH problems. The findings, based on data from leaders and employees across 13 organizations and at multiple time points, confirmed that MHAT participation was effective insofar that it led to an increase in leaders' MH-related knowledge and self-efficacy. Regarding trainee characteristics, we confirmed that leaders' LGO predicted this change in MH-related self-efficacy, but not in MH-related knowledge. Furthermore, the effect of leaders' LGO on MH-related self-efficacy change depended on organizations' climate of MH openness, the extent to which employees perceive the organization as supportive of MH, but not on leaders' prior experience in supporting employee MH, as captured through followers' ratings of their MH-supportive behaviors.

In uncovering what works 'For whom, and under what circumstances' (Nielsen & Miraglia, 2017) when it comes to MH-focused leadership training, we make two important contributions to the training and leadership literatures and practice. First, drawing on social cognitive theory (Bandura, 1986), we confirmed the effectiveness of MHAT for the short-term training outcomes of MH-related knowledge and MH-related self-efficacy (Dimoff et al., 2016). This is of importance as both are regarded as important training (e.g., Lacerenza et al., 2017) and leadership development outcomes (e.g., Kwok et al., 2021) due to their high

predictive value for the training transfer of soft skills (Blume et al., 2010; Chiaburu & Marinova, 2005), such as MH-support.

Consistent with resource allocation theory (Kanfer & Ackerman, 1989), we found that training-induced changes in MH-related self-efficacy, but not in MH-related knowledge, were predicted by leaders' LGO. In doing so, we expanded the current literature through placing the spotlight on trainees. This is important as trainees are often overlooked and treated as passive recipients in formal training and leadership training (Lacerenza et al., 2017; Nielsen & Shepherd, 2022). Prior focus on wait-list control designs highlight between group differences but obscure the observation that individuals don't all develop uniformly during leadership training (Snow, 1991). While leader trainee characteristics have been recognized in prior literature as potential sources of training design flaws and bias (Martin et al., 2021) there has been little effort in prior research to identify which leader trainee characteristics influence training outcomes and how. The evidence presented here on the role of LGO for MHAT training effectiveness provides initial evidence of the significance of leader trainee characteristics, in line with the broader training literature (Machin & Fogarty, 2003).

Although our findings are aligned with research that has explored, for example, leadership-specific self-efficacy increases subsequent to leadership training (Kozlowski et al., 2001; Kwok et al., 2021), LGO does not seem to influences changes in MH-related knowledge following MHAT participation. It is possible that changes in knowledge depend on other individual characteristics we did not measure, such as individuals' cognitive ability (see e.g., Kozlowski et al., 2001). We also note that the knowledge data showed an increase in the mean, but a decrease in the variance of knowledge scores between pre- and post-training measurements. Although this is consistent with the goal of training to bring all participants to the same level of knowledge, it may have suppressed the likelihood of a significant direct effect by reducing the variance in the dependent variable.

Second, we contribute by exploring two contextual factors as important boundary conditions of the relationship between leaders' LGO and training-induced changes in MH-related knowledge and self-efficacy: vis organizational climate and leaders' prior MH-supportive behaviors. The significant role of context in shaping leadership (e.g., Inceoglu et al., 2021; Oc, 2018) and training outcomes (Baldwin & Ford, 1988; Blume et al., 2010) has been repeatedly highlighted. Yet, its consideration in leadership training and specifically MH-focused leadership training is lacking, which is problematic given the need to 'get this type of training right' in light of its role in alleviate rising MH problems (Hammer et al., 2024; Kelloway et al., 2023; World Health Organization, 2022b). We confirmed that the effect of LGO on MH-related self-efficacy changes was dependent on organizational climate of MH openness, which we defined as the extent to which employees perceive their organization as supportive of MH. Specifically, leaders' LGO only had a positive effect on MH-related changes when the organization was perceived as supportive of MH, but not if, for example, talking about MH was perceived as problematic and sanctioned within an organization (low climate of MH openness).

Our choice of exploring this type of climate over other related climates, such as a broad organizational health climate (Zweber et al., 2016), was motivated by the wide-spread stigma surrounding MH (Thornicroft et al., 2022) as opposed to physical health, the fact that the societal context influences organizational members' behavior through organizational norms and standards (Johns, 2006, 2018), and the severe consequences of stigma for individuals suffering from MH problems (e.g., Follmer & Jones, 2018; Thornicroft et al., 2016). As such, our research highlights the dependency of MH-focused leadership training on the supportiveness and alignment of the context to maximize training outcomes.

While our findings supported our hypotheses for climate of MH openness as a distal motivational process and MH-related self-efficacy as an outcome, this climate did not

enhance the effect of LGO on MH-related knowledge. This might reflect that MHAT achieved its intended purpose in terms of MH knowledge gains, and that its capacity to instill learning in participants is robust and not subject to individual (here: LGO) or contextual influences (here: climate of MH openness); a testament to the rigor and theory driven design of the MHAT (Dimoff et al., 2016; Dimoff & Kelloway, 2019b).

Similarly, we did not find support for leaders' prior MH-supportive behaviors as a moderator of the relationships between leaders' LGO, MH-related knowledge and MH-related self-efficacy. Our interest in exploring these behaviors stemmed from rising levels of MH literacy and awareness in the wider population (Sequeira et al., 2022), discussion of ceiling effects (e.g., Goedendorp & Steverink, 2017) and our intention of capturing the influence of such task-specific skills on training effectiveness. Our suggestion was also consistent with the observation that prior behavioral experience augments training effects (Alao & Guthrie, 1999; Day, Bastardoz, et al., 2021), as well as the developmental readiness perspective of leadership development (Hannah & Lester, 2009), which states that individuals with existing knowledge and skills are better able to take advantage of training, shaping training effects (see also Kwok et al., 2021). We noted the possibility that prior MH-supportive behaviors are more likely in organizations that have a high climate of MH openness and therefore the risk of collinearity when including two moderators simultaneously.

Therefore, we ran post-hoc analyses which confirmed that, in the absence of the climate variable, leaders' prior MH-related behaviors, as rated by followers, did indeed strengthen the link between LGO and changes in MH-related self-efficacy. As such, these findings offer some limited support for our interpretation of resource allocation theory (Kanfer & Ackerman, 1989) and the developmental readiness perspective (Hannah & Lester, 2009). However, even when considered as an independent moderator, leaders' prior MH-

supportive behaviors did not interact with leaders' LGO to predict post-training changes in MH-related knowledge, lending further evidence to the conclusion that the MHAT program has the capacity to produce knowledge improvements irrespective of the individual and contextual influences studied here.

Limitations and directions for future research

Although our study has methodological strengths, including the pre-post design and the use of multi-source, multi-time point data from 13 organizations, we cannot infer causality, as we did not conduct a RCT (Rubin, 1974). Our study is not uncommon in this regard (e.g., Hammer et al., 2021), as a random allocation of leaders to the training/ control condition is often not practically possible, with researchers having to balance advantages and disadvantages of research designs with organizational access (Martin et al., 2021). In line with our focus on contextual factors and given the worsening MH crisis (World Health Organization, 2022b), we did not consider it ethical to withhold training (Martin et al., 2021), instead prioritizing training leaders from multiple organizations from multiple sectors. We believe the risk of other hidden causal factors on our outcomes to be limited by the short time interval between leaders' pre- and post-training measurements (3 hours), with previous research using a waitlist-control design supporting that MHAT participation leads to MH-related self-efficacy and knowledge increases (Dimoff et al., 2016). Nevertheless, and to exclude training effects, future research assessing the effectiveness of MH-focused leadership training and the role of contextual factors using RCTs is needed.

Additionally, our study builds on previous research showing that MHAT-induced changes are maintained 3 months after training participation (Dimoff & Kelloway, 2019b) and that self-efficacy constitutes an important, established predictor of training transfer, particularly of soft skills (Blume et al., 2010). Yet, we cannot be certain that changes in MH-

related knowledge and self-efficacy are maintained over time, and that these will translate into MH-supportive behaviors on-the-job (Day, Bastardoz, et al., 2021). Training transfer is said to evolve over time (Blume et al., 2019), and the rate at which different skills and competencies change is difficult to determine (Day, Bastardoz, et al., 2021), particularly due to their dependence on opportunities to practice (Ford et al., 1992). Another limitation of our study pertaining to the effects of individual and contextual factors on the outcome of knowledge increase is the range restriction (Sackett et al., 2007) inherent in our measure of knowledge; a more elaborate measure may have allowed any effects on knowledge change to become evident. Therefore, future research that examines the role of contextual factors for MH-focused leadership training effectiveness should adopt longer timeframes and more extended measures of outcomes, especially MH-related knowledge.

Furthermore, our finding that leaders' LGO is related to a change in MH-related self-efficacy and that the organizational climate of MH openness strengthens this link, indicates that leaders with a low LGO are less likely to benefit from MHAT. Although trainees' LGO is a known predictor of wider training outcomes (Kozlowski et al., 2001; Payne et al., 2007), future research should consider how MH-focused training could be designed to improve training outcomes for all participants and what contextual factors might increase training outcomes for this trainee group specifically. However, more generally speaking, our study was only able to explore three factors and their interaction in shaping MH-focused leadership training effectiveness. Future research should extend this evidence base by testing whether other theoretically relevant proximal (e.g., leader personality, Smith-Jentsch et al., 2001; intelligence, Bandura & Dweck, 1985; MH-related stigma, Janssens et al., 2021) and distal (e.g., mandatory vs voluntary training requirements, Lacerenza et al., 2017; formal organizational policies and resources for MH support, senior leadership endorsement of MH-related training and employee MH support by managers) influence the acquisition of MH-

related knowledge during MHAT and contribute to a boost in trainee MH-related self-efficacy. Leadership-related factors should also be considered, including leadership identity (Kragt & Guenter, 2018; Kwok et al., 2021) and leadership styles, such as servant leadership, which is linked to a concern for follower wellbeing and thriving (Eva et al., 2019). Further factors that stand out for us are, given the role modeling function of leadership, the extent to which trainees' supervisors value and prioritize staff MH, or leaders' job demands (e.g., Grossman & Salas, 2011; Tonhäuser & Büker, 2016), such as workload, given that research indicates that leader stress translates into employee stress through changes in leader behavior (Harms et al., 2017).

Additionally, we found in our main analysis that leaders' pre-training MH-related behaviors did not strengthen the link between LGO and MH-related knowledge and self-efficacy changes in the presence of climate of MH openness as an independent moderator. Reasons for this might include that, when both prior experience and the organizational context are considered, the latter seems to represent a strong situation through providing clear guidance regarding expected behaviors (Meyer et al., 2010; Mischel, 1977) or that leaders in organizations with such a climate have generally higher levels of MH-related behaviors. As arguments opposed to ours can be made based on the notion of 'task complexity' in resource allocation theory (Kanfer & Ackerman, 1989), which can be interpreted as individuals with a low perceived ability (here: low prior MH-supportive behaviors) allocating more resources to MHAT and the developmental need perspective in leadership development (Kragt & Guenter, 2018), we encourage future research to tease out the mechanisms through which climate for MH openness operates as a boundary condition.

Finally, we chose a time interval of two weeks between the measurement of follower-rated perceptions of leaders' MH-supportive behaviors and organizational climate of MH openness and leaders' MHAT participation as it allowed us to minimize the biasing effect of

common method bias on our findings (Podsakoff et al., 2003), and as it was feasible across all 13 organizations. Although the temporal dynamics of shared perceptions are mostly unknown (see e.g., Edmondson & Bransby, 2023), given that leaders had supervised responding followers on average for 4.8 years and followers had an average organizational tenure of 7.0 years, we have no reason to assume that these perceptions would have changed within the two weeks' interval. Future research might want to build on this through including objective measures of the contextual factors, such as frequency of leaders referring employees to employee assistance programs or organizational policies and resources supportive of MH.

Practical implications

Our paper was motivated by the recognized importance of MH-focused leadership training (Hammer et al., 2024; Kelloway et al., 2023) in helping to alleviate the current MH crisis and its financial impact on organizations (World Health Organization, 2022b, 2024). First, our findings show, in line with other research (Dimoff & Kelloway, 2019b; Dimoff et al., 2016), that MHAT is both an effective and efficient organizational intervention to upskill managers to deal with the MH challenges of their employees. Our findings add credence the existing body of evidence on the benefits of MHAT, such as that it reduces leaders' MH-related stigma (Dimoff et al., 2016), increases staff's awareness and usage of organizational MH resources (Dimoff & Kelloway, 2019b), and reduces in the duration of employees' MH-related short-term disability claims (Dimoff et al., 2016). As such, we recommend organizations to adopt MHAT, or a similar MH-focused leadership training, to ensure their leaders have MH-related knowledge and feel confident to provide MH-related support (i.e., MH-related self-efficacy; e.g., recognize symptoms and signpost resources). Furthermore, our findings demonstrate that individual differences and contextual factors may be more relevant in determining whether training affects the likelihood of trainees transferring the knowledge

to the workplace (i.e. MH-related self-efficacy), rather than knowledge gained. As such, MH-related training for managers should be designed to focus more heavily on skills for applying the gained knowledge, increasing the likelihood or training transfer.

Second, our study revealed that leaders' LGO, individuals' drive to learn new skills, master novel situations and learn from experiences (VandeWalle et al., 2001), was predictive of changes in MH-related self-efficacy, but not knowledge, subsequent to MHAT participation. The finding regarding MH-related self-efficacy is reflective of effects generally observed for task-specific self-efficacy (Payne et al., 2007). Although LGO has not yet been tested as a predictor of MHAT-induced longer-term changes and we do not know whether trainee characteristics influence, for example, transfer of training in MH-focused leadership training, this is plausible given findings from wider training research (Blume et al., 2019; Lacerenza et al., 2017). As such, we would advise organizations to consider additional avenues for ensuring that low LGO leaders feel confident in the provision of MH support and offer this support in practice. These avenues could include ensuring that low LGO managers have the opportunity to work with and engage in training alongside high LGO managers, which might contribute to these leaders benefitting more from the training (Dierdorff & Ellington, 2012). Furthermore, organizations could offer incentives for leaders to stay up-to-date with organizational, regional and national MH resources, such as selecting leaders to become MH champions, which might motivate low LGO leaders to engage with MHAT and MH content. While trainee MH-related self-efficacy was contingent on their LGO, this effect was not present for the MH-related knowledge increase. For organizations, this means that participants will benefit from MHAT participation irrespective of their LGO in their knowledge acquisition, but that those with low LGO may need further feedback, support and practice opportunities to develop the appropriate level of self-efficacy to motivate training transfer.

Last, and related to the need for organizations to think about MH broadly and long-term and not just in terms of 'ticking a box' through offering a one-off MH-focused leadership training, our findings show that the organizational context in which training is offered plays a crucial role for training effectiveness. Specifically, leaders' LGO was only related to changes in their MH-related self-efficacy if staff perceived organizations as having a high climate of MH openness and therefore being widely supportive of MH. This entails that staff do not feel unfairly treated, rejected or discriminated if they have MH problems, that MH can be talked about openly and that staff with MH problems feel valued. The non-significant effects of LGO moderated by climate of MH openness and prior MH-supportive behaviors on MH-related knowledge indicate that knowledge gains can be realized even in organizations that have yet to develop a conducive climate and for leaders who may have not yet had the opportunity to enact relevant supportive behaviors. In fact, introducing MHAT for managers in such conditions may facilitate the development of a climate of MH openness within the organization and motivate leader enactment of MH-supportive behaviors, such that they develop their MH-related self-efficacy through practice and continuous development even for trainees who did not achieve such benefits during the training.

Research on climates argues that these can be considered as representing strong situations that provide clear guidance regarding the behaviors that are expected of employees and leaders (Meyer et al., 2010; Mischel, 1977) and that will be organizationally rewarded through, for example, promotion. As cultural change is inherently slow and a long-term endeavor (Schein, 1984), we advise organizations to think about all organizational elements that could signal MH supportiveness to staff (Spence, 1978), such as whether staff, who are open about their MH history, get selected into senior leadership positions, the MH resources organizations offer or whether organizations actively support the World Mental Health Day.

Conclusion

Drawing on data from 13 organizations (85 leaders; 383 followers), our results suggest that one-off participation in the 3-hour MHAT significantly contributed to changes in leaders' MH-related knowledge and MH-related self-efficacy. Our exploration of trainee characteristics revealed that leaders with a high LGO benefitted more from the training in relation to MH-related self-efficacy changes, but not MH-related knowledge changes. Furthermore, organizational climate of MH openness shaped this significant effect such that leaders' LGO only lead to a change in MH-related self-efficacy if organizations were supportive of MH. Practically, we contribute to the MHAT evidence base, according to which the organizational adoption of MHAT or a comparable MH-focused leadership training is highly beneficial. Given our finding on climate of MH openness, we however also urge organizations to think about MH more widely and regard MH-focused leadership training as one important tool in their MH toolbox.

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Tables

Table 1

Intercorrelations and descriptives

	M	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Organizational tenure	12.26	11.23													
2. Trainer combo 1	0.24	0.43	.26*												
3. Trainer combo 2	0.09	0.29	0.04	-0.18											
4. Trainer combo 3	0.09	0.29	0.10	-0.18	-0.10										
5. Trainer combo 4	0.04	0.19	-0.17	-0.11	-0.06	-0.06									
6. Trainer combo 5	0.20	0.40	-0.16	-.28*	-0.16	-0.16	-0.10								
7. Trainer combo 6	0.14	0.35	-.27*	-0.15	-0.13	-0.13	-0.08	-0.20							
8. MH-related knowledge (T2)	1.84	0.85	0.07	.36**	-.27*	-.23*	0.11	-0.01	-0.13						
9. MH-related knowledge (T3)	2.80	0.43	0.11	0.13	0.06	0.15	0.09	-.38**	0.11	0.21					
10. MH-related self-efficacy (T2)	3.56	0.55	-.24*	-0.20	-0.06	-0.20	0.06	0.06	0.06	0.01	0.00				
11. MH-related self-efficacy (T3)	3.99	0.55	-.24*	-0.11	0.00	-.22*	0.00	-0.02	0.08	-0.01	-0.01	.62**			
12. LGO (T2)	3.89	0.56	-.22*	0.14	-0.06	-.30**	.33**	0.01	0.11	0.15	0.03	0.17	.29**		
13. Climate of MH openness group (T1)[a]	3.57	0.59	0.04	-0.19	-0.12	-0.04	0.06	0.05	-0.11	0.11	-0.07	-0.02	-0.05	-0.04	
14. MH-supportive behaviors (T1)[a]	3.71	0.64	0.21	0.21	-.22*	-.24*	0.09	0.09	-.25*	.34**	-0.03	0.06	0.05	0.04	.46**

*Note. N = 85. MH = Mental health. Trainer combo = Combination of trainers. LGO = Learning goal orientation. *p < .05, **p < .01*

[a] *Follower-rated*

Table 2

Results of Regression Analysis for LGO, MH-related Self-efficacy and MH-related Knowledge.

	MH-related knowledge (T3) *β (SE)*	MH-related self-efficacy (T3) *β (SE)*
MH-related knowledge (T2)	0.15* (.06)	
MH-related self-efficacy (T2)		0.54*** (.10)
Organizational tenure (T1)	0.00 (.00)	-0.01 (.01)
Trainer combo 1 (T2)	0.03 (.13)	-.13 (.15)
Trainer combo 2 (T2)	0.22 (.18)	-.05 (.19)
Trainer combo 3 (T2)	0.33 (.18)	-0.19 (.19)
Trainer combo 4 (T2)	0.17 (.27)	-0.46 (.29)
Trainer combo 5 (T2)	-.28* (.14)	-.21 (.15)
Trainer combo 6 (T2)	.21 (.15)	-.13 (.16)
LGO (T2)	.02 (.09)	0.21* (.10)

Note. $N = 85$. MH = Mental health. Trainer combo = Combination of trainers. LGO = Learning goal orientation. *$p < .05$, ***$p < .001$

Table 3

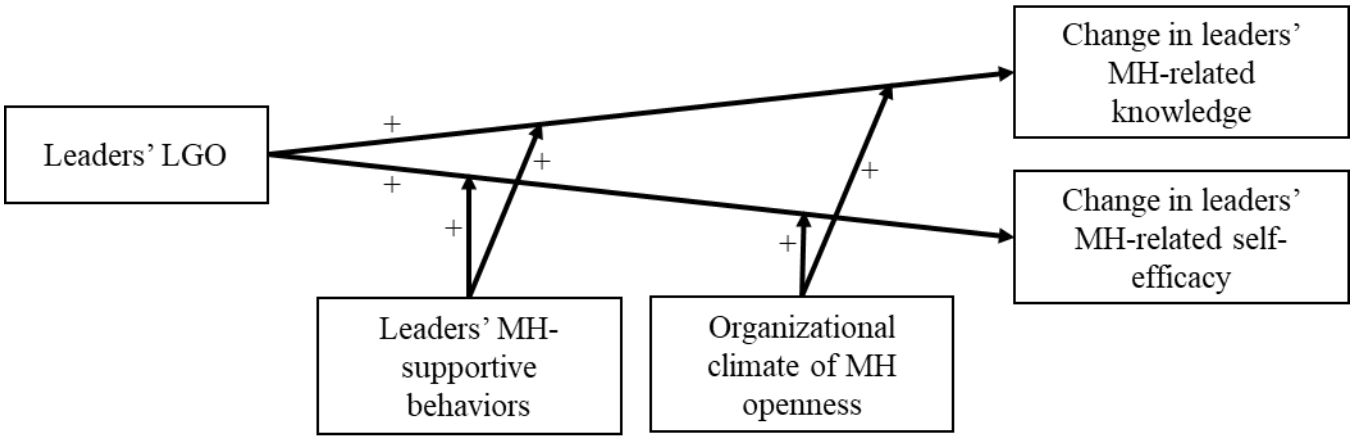
Results of Moderated Regression Analysis for LGO, MH-supportive Behaviors and Climate of MH Openness Explaining MH-related Knowledge and MH-related Self-efficacy

	MH-related knowledge (T3) *β (SE)*	MH-related self-efficacy (T3) *β (SE)*
MH-related knowledge (T2)	.14 (.06)*	
MH-related self-efficacy (T2)		.64 (.09)***
Organizational tenure (T2)	.00 (.00)	-.01 (.01)
Trainer combo 1 (T2)	.02 (.15)	-.19 (.15)
Trainer combo 2 (T2)	.21 (.19)	-.05 (.18)
Trainer combo 3 (T2)	.36 (.20)*	-.17 (.20)
Trainer combo 4 (T2)	.18 (.28)	-.59 (.27)*
Trainer combo 5 (T2)	-.28 (.14)	-.20 (.14)
Trainer combo 6 (T2)	.19 (.16)	-.06 (.16)
LGO (T2)	.02 (.09)	-.18 (.09)
Climate of MH openness (T1)	-.06 (.10)	-.20 (.10)
MH-supportive behaviors (T1)	.02 (.10)	.12 (.09)
LGO X Climate of MH openness	.07 (.21)	.60 (.21)*
LGO X MH-supportive behaviors	-.10 (.19)	.15 (.18)

Note. $N = 85$. MH = Mental Health. LGO = Learning goal orientation. Combo = Combination. Variables were grand mean centered before interactions were computed.*$p < .05$, ***$p < .001$

FIGURE 1

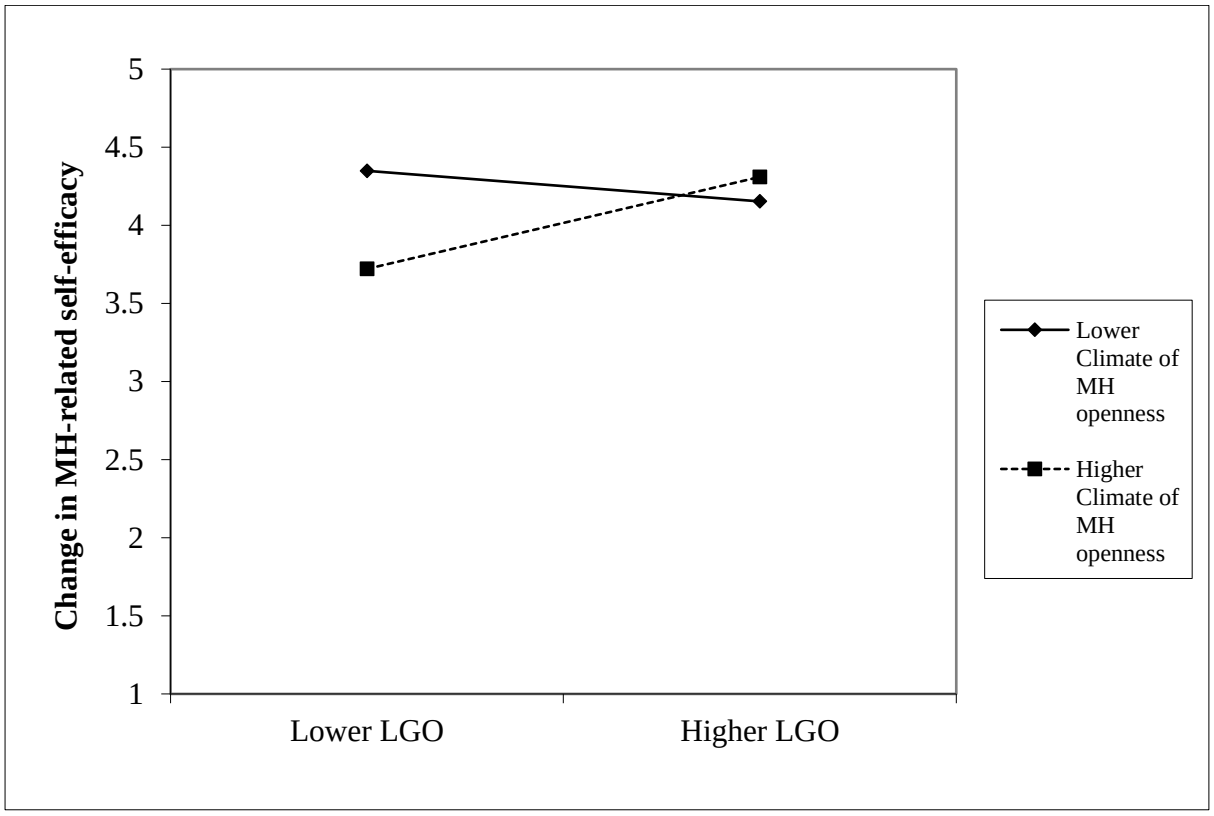
Hypothesized model



Note. LGO = Learning goal orientation. MH = Mental Health. Moderator variables were rated by followers.

FIGURE 2

Interaction of leaders' LGO and Organizational climate of MH openness on the Change in MH-related self-efficacy



Note. N = 85. LGO = Learning goal orientation. MH = Mental Health.